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ABSTRACT

This paper provides a brief history of the Educational Resources Information Center (ERIC), as well as an overview of the present status of the ERIC system, i.e., its management, technical operations, current products and services, current plans, and projected new activities. After an account of the legislative mandate that resulted in the formation of ERIC, the organization's beginnings and early developmental history are recounted. A management perspective on the present state of ERIC is then presented, which includes an outline of ERIC's organizational mission, objectives, and functions; a summary of ERIC's structure; and a description of the governmental environment within which ERIC functions. The operational aspects of ERIC are also addressed, with specific attention devoted to ERIC system components (Central ERIC, the ERIC Clearinghouses, the ERIC Processing and Reference Facility, the ERIC Document Reproduction Service, the CIJE Publisher, the U.S. Government Printing Office, and online retrieval vendors), the roles of system components, controls for system coordination, and output products and services. Prospects for future ERIC activities are then addressed. Accompanying the text is a set of nine figures, tables, and graphs. (JL)

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DEVELOPMENT AND CURRENT STATUS OF THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

A Model Bibliographic Control System Covering the Literature of Education in the United States

by

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for Presentation at the

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I. INTRODUCTION

The Educational Resources Information Center, or ERIC as it has come to be known, is the de facto U.S. national system for the bibliographic control of the document and journal article (i.e. non-book) literature of education.

ERIC is sponsored by the National Institute of Education (NIE), within the U.S. Department of Education, and is operated by a variety of contractors from both the non-profit and for-profit sectors.

This paper will attempt to describe briefly the history of ERIC, i.e. its background, origins, and early developmental history, and then, at somewhat greater length, to describe the ERIC system as it is today. The management and the technical operations perspectives will be given approximately equal emphasis. ERIC's current products and services will be described, as well as some current plans and projected new activities.

ERIC has been in existence since the mid-1960's, a period of over fifteen years. During this time it has acquired considerable hard-earned experience, most of the benefits of which can be found recorded in its documentation, forms, procedures, products, and institutional memory. Because of this, and because of the ease of obtaining ERIC's products and documentation, it has sometimes been the focus of attention of those planning new systems of bibliographic control, in both education and non-education disciplines. That is why we sometimes describe ERIC as a "model" system, because aspects of it have been imitated and because we actively encourage that kind of information transfer.

II. BACKGROUNDS/ORIGINS

A. Legislative Mandate/Historical Beginnings

The United States does not have a single, unified, articulated national information policy. There have been many debates as to whether one is needed and/or advisable and what it might be, but at the present time each agency or group looks within its own enabling legislation or to the interests of its own group members to determine its information programs and policies. This has led, admittedly, to some confusion and to some confrontations between sectors, but at the same time it has also led to a pluralistic richness of approaches and a freedom to simultaneously pursue many different solutions.

Government interest in information as a significant resource can be traced perhaps most easily to the events of World War II, which resulted in a flood of domestic and foreign technical report literature which the conventional libraries were not sure what to do with. Many of the organizations with us today as technical report processing centers, such as the National Technical Information

Service (NTIS) and the Defense Technical Information Center (DTIC), had their roots in organizations formed either during the war or in the postwar period to achieve bibliographic control over this new and "fugitive" literature.

ERIC cannot lay claim to going back quite that far, but the Government never forgot the significance of the report literature and when, in the early 1960s, it found itself faced with a chaotic situation in the form of a proliferation of unpublished reports emanating from increased Federal funding of research, exemplary programs, and demonstration projects by the Department of Health, Education, and Welfare, the environment was ripe for a system like ERIC.

B. Early Developmental History

The first gropings for a solution can be found in conceptualization and feasibility studies dating back to 1960. In 1961, perhaps realizing that an information system cannot spring into existence full-blown without some advance work being done, we find the first efforts being funded to conceptualize an ERIC Thesaurus. Many of these studies did not bear immediate tangible fruit, but it was apparently necessary to go through the process and examine the alternatives before decisive implementation could take place. However, by 1964 the long gestation period was finally over and ERIC can be said to have been "founded," in the form of an obscure organizational unit within the then Office of Education.

The problem ERIC was asked to solve can be exemplified most simply by the following illustration: a study or research effort was commissioned; the final report (perhaps the only result) was sent to the Project Monitor in 10-25 copies; if approved, a limited distribution was effected; a copy of the report sat on the monitor's shelf for awhile, eventually the monitor was re-assigned or left; a year or so after the project was closed, virtually no one could find a copy of the report. Over time, it became, to all intents and purposes, as if the project had never existed. As a result, Government began periodically to "re-invent the wheel." Clearly something had to be done. What was needed was a "system" for acquiring, selecting, processing, announcing, disseminating, and archiving the growing body of knowledge represented by these reports and other documents.

For a brief period, from April 1964 to March 1966, ERIC functioned as a traditional, centralized Federal information center. It was during this period that the first contract was let to place documents on microfiche. This contract became the beginnings of the ERIC Document Reproduction Service (EDRS). During this period, however, as the newly-formed ERIC unit planned its future, it rapidly decided to structure itself in the future on a decentralized model. It was felt that education in the United States was very much a decentralized enterprise, with power dispersed to the states and localities,

professional associations, and teacher unions. Information was being developed at all these levels and a monolithic information center in Washington was not felt to be the best way to try to keep abreast of such a diffuse and dispersed community. With surprising rapidity a system of separate "Clearinghouses" was conceptualized, each concentrating on a major section of the field of education and each bearing responsibility for acquiring the documentation of that field and for interacting with that particular part of the educational community.

During 1966, contracts were let for twelve ERIC Clearinghouses and for a central editorial and computer facility. The Panel on Educational Terminology (PET) was established to guide development of the fledgling ERIC Thesaurus. In November 1966, the first small issue of ERIC's abstract journal appeared, then called Research in Education (RIE). In 1967, an additional six Clearinghouses were established, for a total of 18. Since then the number has fluctuated up and down in response to needs and priorities. There have been a total of 23 different Clearinghouses, but the number has currently stabilized at 16. Also in 1967, the word "Research" in ERIC's name was changed to "Resources," reflecting the early recognition that research results were not the only bibliographic resources that ERIC was going to collect.

Initially, ERIC concentrated on the report literature generated by the funding of its parent agency. The first documents were virtually all of this type and they dictated the nature of the early database and the content of the ERIC Thesaurus, which was being developed from the initial raw indexing efforts. In fact, one of ERIC's first major compilations was an effort to bring the then known "backlog" of documents under control. This effort resulted in the document entitled Office of Education Research Reports, 1956-1965.

Information systems have a natural appetite for their raw materials, however, and while ERIC's has been modest over the years, it didn't take it long to attempt to fill the need for an abstract journal dealing with the journal article literature. In 1969, the first issue of Current Index to Journals in Education (CIJE) appeared. Since that initial rapid expansion, however, ERIC has looked only speculatively at the various other kinds of educational resources that might conceivably come under its wing and become new files. It was easy to bypass the commercial hardbound book output of the traditional commercial publishers, so well handled by the conventional library system, but many other possibilities exist and have been foregone due to a combination of the shortage of funding and lack of a clear mandate for ERIC to increase its coverage.

But this is enough history, and probably more than a paper of this type can afford. I would like to present to you next ERIC as it is today from the perspective of the Government manager that sets the policies and lets the contracts for the specific operational components.

III. ERIC AS IT IS TODAY

A. Management Perspective

1. Mission, Objectives, and Functions

ERIC's mission is to bring the English-language literature of education to the attention of the educational community and to make it as easily accessible by this community as possible, so that improvements in the educational process can be facilitated. For this purpose, the educational community is broadly defined to include: researchers, teachers, administrators, policy makers, librarians, counselors, students, and those members of the general public pursuing an educational interest.

To accomplish this broad mission, ERIC has established a number of specific objectives which are in turn achieved by a set of actual operational functions.

ERIC's objectives are:

- Bibliographic Control

  ERIC will establish procedures for the achievement of bibliographic control over English-language documents and journal articles dealing with education in all its aspects. Documents include research reports, project descriptions, evaluations, bibliographies, curriculum guides, speeches, dissertations, conference proceedings and papers, and many other types of material produced for all educational levels. Journal articles include not only those appearing in journals devoted to education, but also those dealing with education that appear in non-education journals. Currently over 700 journals are covered by ERIC.

- Announcement to the Educational Community

  The material placed under bibliographic control by ERIC will be announced to the user community on a timely basis and will be indexed for easy access. ERIC will not simply collect without announcement.

- Availability of Documents in Full Text

  The material announced to the user community will be obtainable in full text. ERIC will not simply announce material for which no availability can be determined.

- Permanent Archive

  Material announced by ERIC will be available indefinitely, since even information that eventually becomes obsolete can have value as an historical record and to prevent replication.

- Computerized Retrievability

  The ERIC database will be accessible to the users by computerized techniques as well as by manual techniques. The ERIC database is very large and manual searches can be onerous and time-consuming. For this reason, computerized access and the sophisticated searching techniques that can be applied in that mode, must be available. At the same time, since not all users have access to computers or computer terminals, manual access must continue to be provided.

- Information Analysis, Synthesis, and Reduction (Transformations)

  Within its limited resources, ERIC will attempt to aid the users in coping with the large volume of information by performing and publishing analyses that, in effect reduce many documents to one "Information Analysis Product" by summarizing the content of the many documents.

- Reference and User Services

  ERIC will guide the user in the use of the ERIC database and its related products and, in those instances where ERIC cannot itself provide the information required or perform the service required, will refer the user to an appropriate source.

- Service to All Levels of User

  ERIC will attempt to serve all levels of user including the researcher in the laboratory, the administrator in the office, and the teacher in the classroom.

- Low Cost

  ERIC will attempt to achieve its objectives at the lowest cost to the Government. It will also attempt to provide its products and services at the lowest possible cost to the user commensurate with a quality product. This objective will require a judicious use of Government, non-profit, and for-profit components.

- Wide Dissemination

  ERIC will attempt to disseminate its information as widely as possible, for the benefit of as many users as possible.

- Leadership in Technology and Standards

  ERIC will strive for leadership in using the latest technology and advances in information science. ERIC will provide training and technical assistance as a part of leadership.

Some of the functions that ERIC performs to achieve these objectives are:

- Acquisition of Documentary Material

  ERIC components have established a nationwide network of contacts and arrangements with sources of documents in order to obtain copies of all signficant educational documents issued in the U.S. Selected non-U.S. sources are also solicited.

- Selection and Screening (to Achieve Quality Control)

  Detailed guidelines have been developed concerning both the types of documents desired for the ERIC system and the appropriate content of those documents. Uniform criteria are used throughout the system. At the present time, ERIC selects one document from every three acquired.

- Cataloging, Indexing, Abstracting (Technical Processing)

  Documents selected by ERIC are subjected to a detailed processing that attempts to describe each document uniquely and to summarize its subject content via index terms and an informative abstract.

- Lexicography

  The ERIC Thesaurus and its use in indexing provide controlled vocabulary access to the ERIC database, to complement the free text access provided by modern retrieval systems. It is important that the ERIC Thesaurus remain up-to-date with respect to current terminology.

- Database Generation and Maintenance

  The surrogate records created by ERIC must be incorporated in a computerized database in order to achieve the various objectives of timely announcement, sophisticated retrieval, and wide dissemination. This involves data entry, editorial, and computer processing functions.

- Abstract Journal Production

To achieve its announcement objectives, ERIC currently publishes two monthly abstract journals: Resources in Education (RIE) and Current Index to Journals in Education (CIJE).

- Information Analysis Product (IAP) Publication

The ERIC Clearinghouses all have programs designed to produce a certain number of information syntheses during the course of the year. These are widely distributed, highlighted in RIE, announced in an annual bibliography, and made available in a special microfiche product. The Clearinghouses are ideal foci for this function because they are in close touch with the major movements, trends, and sources of expertise in their respective subject areas.

- Document Delivery

In order to ensure that ERIC documents are both available and available at low cost, ERIC arranges for its documents to be microfiched (using the low cost vesicular process). The microfiche collection may be subscribed to (there are currently over 700 subscribers) or documents may be ordered individually in microfiche or paper copy reproductions from the microfiche. The entire document delivery function is provided by private industry at no cost to the Government. The contractor with the lowest price to the public wins the right to provide the service (and to make what profit they can).

- Professional Meeting Participation

To achieve wide public awareness of ERIC and its products, the ERIC staff participate extensively in professional meetings and distribute ERIC informational literature at these meetings.

- Reference and User Services

Clearinghouses maintain modest programs of user services that permit personal contact with users and the answering of individual questions. Computer searches of the ERIC database are frequently made on a cost recovery basis. For extensive services beyond the capacity of the Clearinghouse, users may be referred to geographically close sources of service (as listed in the various ERIC directories). Where appropriate, users may be referred to the vendors providing sophisticated online retrieval services for the ERIC database (and hundreds of other databases). The major vendors of this type are DIALOG Information Services,

System Development Corporation (SDC), and Bibliographic Retrieval Services (BRS). In other cases, users may be interested in purchasing the ERIC files directly and searching them on their own computers. ERIC sells its files on magnetic tape to interested users at an economical price calculated to promote such usage.

- Training

  The ERIC Clearinghouses regularly hold training sessions for librarians, information specialists, reference personnel, and other ERIC users. Such training emphasizes the ERIC system, how to use it, and the various tools which provide access to it.

- Technical Assistance

  ERIC offers to provide technical assistance to organizations, such as State education agencies, interested in developing files compatible with ERIC. This effort contributes to the likelihood that state files will in the future be able to "talk" with one another and with ERIC. The occasion is also used to arrange for better contribution of state documents to the ERIC acquisition process.

2. Structure

ERIC is a decentralized system comprising some twenty organizations and extending across the Government, non-profit (universities and professional organizations), and for-profit sectors.

At the top is the Federal component referred to familiarly as "Central ERIC." This is the policymaking, funding, monitoring, and administrative/management unit.

In the middle are the sixteen (16) ERIC Clearinghouses, each located at a non-profit institution already having a considerable interest in and expertise with a particular part of the large field of education. The Clearinghouses are each multi-discipline in nature, but can be characterized as being one of three types:

- Level-Oriented

  e.g. Higher Education, Junior Colleges, Elementary and Early Childhood Education.

- Discipline-Oriented

  e.g. Social Studies, Science and Mathematics, Reading and Communication Skills, Information Resources

- Problem-Oriented

  e.g. Urban Education, Handicapped and Gifted

The private or for-profit sector is represented by three contractors that provide support services in high technology or commercial areas (computer systems, micrographics, and publishing).

Also involved are the U.S. Government Printing Office (GPO), which functions as the printer and subscription agent for RIE, and the vendor organizations which provide online retrieval services against the database.

3. Funding

ERIC operates on the basis of an approximately $5 million budget allocated to it by the National Institute of Education (NIE). The majority of these funds go to the ERIC Clearinghouses in support of the function of building the computerized database. Funds also go to the central editorial and computer facility for the same purpose. ERIC has been budgeted at approximately the same level for the past 6 years which, with inflation, has resulted in a steadily declining buying power.

The micrographics contractor, the commercial publisher, and the online vendors are examples of an important ERIC policy at work. They are providers of services to the end user and they are no-cost-to-the-Government arrangements. ERIC, in effect, gives these organizations a license to, in the first case, microfilm ERIC documents, in the second case, publish the ERIC Thesaurus and Current Index to Journals in Education, and in the third case, to include the ERIC database in retrieval systems. The organizations proceed to provide services and to market products to the public, recovering their costs and making a profit in the process, but not charging the Government a penny. The users, in turn, pay for what they specifically get, but pay no subsidy in tax dollars. A little control is lost in the process, but basically the user gets what is wanted, the contractor makes a profit, and the Government, while paying for database generation, avoids subsidizing the millions of usages.

This principal, which can be called "leveraging" is, along with decentralization, one of the major "signatures" of the ERIC system. It is evident, to some extent, even in the Clearinghouse contracts, where the host organization holding the Clearinghouse contract typically provides some services (e.g., donated personnel, printing of some products, equipment, etc.) above and beyond those strictly paid for by the contract.

4. Governmental Environment

Originally ERIC was formed as a unit within the Office of Education (OE). In 1974, when the research programs of OE were transferred to the new National Institute of Education (NIE), ERIC was included as part of the package transferred. Initially NIE fell within the Department of Health, Education, and Welfare (DHEW). In May 1980, when the new Department of Education was formed, NIE was transferred to it.

With the advent of a new administration in Washington, there has been serious talk of abolishing the Department of Education and returning most of its functions to the states. This has not happened yet, but may be a possibility for 1983. Under such a circumstance, it is difficult to say exactly what will happen to NIE and to ERIC. The ERIC managers would like to think that the ERIC systm has, over the years, developed a positive reputation in the educational community and that its large constituency is known by policy setters at the upper levels. Furthermore, studies indicate that the secondary use of ERIC and its products by information searchers is so large that approximately $24 of non-government money is spent on ERIC for every one dollar that the government spends building the database. Such a "seeding" approach, together with ERIC's already-described policy of utilizing the private sector, is well in line with current administration policies and practices.

For these reasons, we are optimistic about ERIC's chances for survival despite the current budget reduction pressures. We are not sure what may occur organizationally, but we believe that ERIC's legitimate role in building a fundamental bibliographic database for education is recognized and will continue to be funded.

B. Operations Perspective

From an operations perspective, the central fact of life about ERIC is that it exists at no one place, but rather in the form of a network of decentralized but interlocking organizations, each with specific responsibilities and each performing specific functions. Such an organizational structure permits ERIC to better embed itself in the educational community, but it presents very real operational problems, particularly in the area of coordination of efforts, that must be solved by a variety of tools, procedures, and management controls.

I would like first to review for you the components of the ERIC system, the functions that go on at each component, and how the components interact with one another.

1. System Components

The System Components are:

- Central ERIC (within the National Institute of Education;
- 16 ERIC Clearinghouses (within non-profit contractors);
- ERIC Processing and Reference Facility;
- ERIC Document Reproduction Service;
- CIJE Publisher.

In a supporting role, without actually being part of the formal network, are the U.S. Government Printing Office (GPO) and the major vendors of online retrieval services for bibliographic files: DIALOG, SDC, and BRS.

Let us look at each of these components in turn.

2. Role of Each Component and Workflow Between Components

a. Central ERIC

Central ERIC is comprised of a group of less than ten staff members of the National Institute of Education (NIE). Central ERIC has an annual budget of approximately $5 million from which all operating components must be funded. The Central ERIC staff develops the statements of work, competes the contracts, selects the contractors, funds the operations of the contractors, and monitors their performance via required reports, site visits, and periodic reviews. All basic policies and directions are established by Central ERIC, functioning as the system planner. In a sense, the various contractors merely carry out the directions of Central ERIC, though in practice there is adequate scope within each contract to exercise considerable initiative and creativity.

To assist Central ERIC in the performance of its management and planning functions, there exists a Council of ERIC Directors (COED) that meets twice a year to resolve management level issues, and there is a New Technology Committee whose task is to investigate new technologies and to report on their possible use by ERIC.

To assist Central ERIC in the resolution of technical and operational problems there is a Technical Steering Committee, whose job is to make recommendations to improve internal system functioning at the procedural level, and there is an annual Technical Meeting at which representatives of all system components meet to discuss and resolve common problems and issues, to share useful information, and to discuss needed systems improvements. The National Meeting frequently develops issues for the Steering Committee to later analyze and report on.

The Central ERIC monitors are constantly in touch with system components for the purpose of monitoring the work efforts and ensuring contract compliance.

In addition, because Central ERIC is resident within the Department of Education, the majority of documents from that organization enter ERIC via Central ERIC.

b. ERIC Clearinghouses

The principal function of the ERIC Clearinghouses is to capture the literature within their respective areas of subject responsibility. Once captured, the literature is subjected to selection criteria. The documents found to meet the criteria (1 in 3) are "processed," meaning reproduction releases are obtained and they are cataloged, indexed, and abstracted. The results of this processing are forwarded, with the document itself, to the ERIC Facility. If the Clearinghouse has any recommendations for new index terms required to index the literature being transmitted, these are also sent to the Facility. At this point, the responsibility of the Clearinghouses for the database and for the abstract journal publications ceases and shifts to the ERIC Facility.

The other functions of the Clearinghouses pertain to output and use of the database for the benefit of users. The Clearinghouses respond to user inquiries and either answer the questions directly or refer the user to appropriate sources. In addition, each Clearinghouse has a publications program in which they attempt to generate information analysis products that synthesize the literature, reducing the content to many publications to one summary or state-of-the-art publication. Approximately 200 publications per year of this type are generated by the Clearinghouses and are made widely available to users. As the organizations acquiring, selecting, and analyzing the literature, the Clearinghouses function as "gatekeepers," and are in an almost unique position, as the literature passes through their hands, to be aware of its moving edge of trends and interests and to act on that awareness at an early point.

As a further effort to bring ERIC and its bibliographic resources to the working level educator, ERIC Clearinghouse staff participate widely in professional meetings. The annual ERIC Conference Calendar lists over 200 meetings at which the Clearinghouses participate in various degrees.

Frequently the subject areas in which the Clearinghouses operate are represented by professional journals that will give the Clearinghouses a column, in effect, in which they can announce and describe various developments in the literature that will be of interest to readers of that journal.

All of these approaches, and more, are needed in order to reach the vast educational community in the U.S. ERIC spends most of its modest budget building the fundamental database on which its system rests. The remainder is devoted to as many outreach activities as it can practically fund. These are necessarily limited and ERIC's chronic problem has always been how to create an awareness of its information resources in the minds of the hundreds of thousands of educational practitioners.

c. ERIC Processing and Reference Facility

The ERIC Facility is a central editorial and computer processing facility serving Central ERIC and the Clearinghouses. Its functions can be listed as follows:

- Acquisitions

  Even though each Clearinghouse basically performs its own acquisitions function, the Facility performs a centralized acquisition function covering Federal (and some state and international) documents. The objective here is to avoid an excessive number of letters coming into any given Federal agency from the 16 Clearinghouses. Should this occur, the impression would be that one part of ERIC does not know what the other part is doing. With the Facility handling all Federal acquisitions, this coordination is achieved. While the differing subject responsibilities of the Clearinghouses go a long way to prevent duplicative acquisitions efforts, documents do frequently overlap the subject areas of Clearinghouses. As an aid in preventing duplication, the Facility produces two tools for distribution to the Clearinghouses:

  (1) ERIC Acquisitions Arrangements, a cumulative list, by organization name, of all formal acquisitions arrangements in effect by any system component. By reference to this list, a Clearinghouse can determine whether any given organization has previously been contacted, whether its documents are entering the system (and if so by which Clearinghouse), and what kind of reproduction release may have been granted.

(2) Acquisitions Data Report (ADR). At the end of each month, each Clearinghouse reports to the Facility the titles of all documents acquired that month. The Facility merges the 16 reports, analyses duplication, and feeds back both a composite and a customized report to each Clearinghouse. Since the report is in the form of a six-month running cumulation, it is, in effect, a list of all titles in process throughout the system.

The Facility acquires annually approximately 6,000 of the 15,000 documents that are announced in RIE. The remaining 9,000 are acquired by the Clearinghouses.

- Editorial

The ERIC Processing Manual specifies all procedures for processing the documents going into the ERIC database. Even so, with 16 dispersed Clearinghouses, each with its own staff turnover and training problems, there is inevitably some variability in the implementation of the guidelines. To offset this variability between Clearinghouses, the ERIC Facility subjects all incoming records to a standard editorial review process. The objectives of this review are to:

- Correct all typographical, spelling, and grammatical errors.
- Ensure the presence of all mandatory data fields.
- Validate index terms and institutional names against the authority lists established for these entries.
- Check the correctness of the cataloging (i.e. are all data elements cataloged that should be?) and the correctness of the data format (e.g. has the publication date been formatted properly?).
- Remove all duplicates or otherwise unsuitable documents.

Some of the above checks are done by computer, but others can only be done by human editors comparing the processing with the original document.

When the editors are satisfied with their work, they give the go-ahead for the final computer processing that produces the monthly abstract journal and adds that month's records to the ERIC Master File.

- Document Control

The Facility is a central switching center for documents going to the Clearinghouses from central acquisitions and for documents coming from the Clearinghouses for the database. In addition, the Facility stocks all forms and labels common to all components (e.g. data input forms, thesaurus input terms, reproduction releases, disclaimer labels, etc.) and provides these to the Clearinghouses on demand. The Facility prints and stocks a wide variety of brochures, directories, and byproducts of the database, all of which are essential in order to manually use the database and to respond to user inquiries, e.g.

- Pocket Guide to ERIC
- How to Start an ERIC Collection
- Submitting Documents to ERIC
- Directory of ERIC Microfiche Collections
- Directory of ERIC Search Services
- Title Index
- Report Number Index
- Contract/Grant Number Index, etc.

The Facility performs the complimentary distribution of Resources in Education (RIE) and Current Index to Journals in Education (CIJE). The Facility assigns final accession numbers to all documents, matches them with their final computer record, and forwards them to the ERIC Document Reproduction Service (EDRS) for microfiching. These and many more such activities are subsumed under the general rubric "document control."

- Lexicography

New concepts are constantly being generated in the literature and therefore must be provided for in the form of new Descriptors added to the indexing vocabulary, the ERIC Thesaurus. New specific entities are constantly being written about and therefore must be provided for in the form of new Identifiers added to the supplementary indexing vocabulary, the Identifier Authority List (IAL).

The individual indexers at the Clearinghouses, faced with the problem of indexing something new, make the original suggestions for new indexing terminology. It is the Facility lexicographer, however, that analyzes the term, accepts or rejects the recommendation, develops a definition, assigns a group code, and weaves a pattern of cross-references around the new term.

- Data Entry

All bibliographic data created by the Clearinghouses must eventually be put in machine-readable form. Originally the Facility performed data entry for all records. In order to avoid double-keying, ERIC moved rapidly to accomplishing data entry at the point of original keying, the Clearinghouses. At the present time, this is achieved in a wide variety of ways, depending on the hardware available at the particular Clearinghouse:

——Keying on Selectric typewriters using an OCR font that can be scanned by a machine at the Facility and transferred to magnetic tape.

——Keying on word processors equipped with a communications option and sent to the Facility electronically.

——Keying on mini- or microcomputers and sent to the Facility electronically.

——Keyed for in-house computer systems and sent to the Facility in the form of a computer-compatible magnetic tape.

In each of these cases, while the Facility is not actually doing the keying, it is doing scanning and other functions relating to the differing forms of data entry. Eventually, the ERIC Clearinghouses will be sufficiently well-equipped with hardware that one uniform method of data entry will be employed. At the present time, however, ERIC cannot afford to put the same kind of hardware in each Clearinghouse and therefore the ERIC Facility must accommodate itself to whatever the host organization of the Clearinghouse can provide.

- Computer Processing

The ERIC computer system is primarily involved in building and maintaining the database and its associated authority files and in providing publications from the database. It is not concerned with online retrieval insofar as that function is performed at a sophisticated level by the major online vendors.

The software can be subdivided into four main sections: (1) Resume file building, (2) Thesaurus file building, (3) Source Authority List file building, and (4) Preparation for photocomposition.

The ERIC software is written primarily in IBM 360/370 Assembly Language for operation on IBM computers or those that can mimic IBM computers. Certain new programs added over the years have been written in the PL/1 language.

The ERIC software was originally created in 1969. It is the responsibility of the ERIC Facility to operate that software, to maintain it, to improve it, and to add to it, when necessary.

- Reference and User Services

Inquiries about ERIC and about the contents of its database come into the Government at various locations:

- Department of Education
- National Institute of Education
- Central ERIC
- Government Printing Office
- Library of Congress, etc.

Most of these are routed to the ERIC Facility for reply. In addition, some are received directly by the Facility. In a normal year, the Facility will process 8,000 to 12,000 such letters. (At the present time, because of the generally reduced economic activity, there has been a falling off in the volume of inquiries.)

In addition to the letters handled by the Facility, the Clearinghouses annually process a combined total of approximately 50,000 letter and telephone inquiries.

The majority of inquiries concern specific documents that the user wishes to obtain. The Facility identifies the document in the ERIC collection, if at all possible, and provides the user with information about its availability and price. The Facility does not do computer searches for the public, but rather refers such requests to alternative sources, based on its Directory of ERIC Search Services.

In addition to handling inquiries, the reference function gets involved in the preparation of brochures and reference works that can be used to respond to inquiries.

d. ERIC Document Reproduction Service (EDRS)

One of ERIC's strongest features as an information system is that it insists on closing the loop and providing document delivery. It does not merely announce an item and then throw the user on his/her own resources for obtaining a copy. Instead it goes to the trouble of obtaining reproduction releases for 97% of the documents it announces, it places these documents on microfiche, it sells the microfiche on subscription, and it sells on demand microfiche copies and paper copy blowbacks.

The micrographics arm of ERIC is the ERIC Document Reproduction Service (EDRS). The EDRS contract is awarded to the private sector on the basis of lowest cost to the public. At the present time there are over 700 ongoing subscriptions to the ERIC microfiche collection. In the course of a year EDRS distributes well over 10 million microfiche all over the world in connection with these subscriptions. Annual on demand orders amount to around 50,000 for microfiche and 50,000 for paper copy.

In order to microfilm the documents it receives from the Facility, it is necessary for EDRS to take them apart. The original documents are then retained for a four-month holding period, in the event that some error should be discovered and re-filming should prove necessary. After this time the documents are destroyed and the master silver microfilm role becomes the archival form.

The EDRS function takes place at the end of the processing cycle, after both the Clearinghouses and the Facility have done their work. For this reason, there is little interaction from EDRS to the other system components. Occasionally original documents must be returned to their owner. Occasionally documents must be re-filmed to rectify a problem. On the whole, however, EDRS interacts primarily with the users wishing to obtain the full text of the documents announced in RIE.

e. CIJE Publisher

At the same time the ERIC Clearinghouses are acquiring documents and processing them, they are also subscribing to all significant education-related English-language journals and serials and processing the articles found in those publications. The processing for journal articles is slightly different than that for documents in that the number of data elements captured is smaller, a 50-word annotation is written in lieu of an abstract, and no reproduction release need be obtained because ERIC does not attempt to film the journals (which are usually copyrighted).

Apart from these differences, the Clearinghouse processing is much the same as for RIE. The Clearinghouses send the resultant data to the Facility. The Facility, however, instead of preparing the data for publication at GPO, sends it instead to a commercial press that undertakes the cost of printing and publishing CIJE for whatever it can make on subscriptions. The arrangement with the press is at no cost to the Government.

The CIJE publisher maintains the master list of journals indexed for CIJE. As the Clearinghouses decide to add or to delete journals, they contact the CIJE publisher so that the master list can be updated.

The document delivery problem with CIJE is left to the commercial journal article reprint services, of which University Microfilms International (UMI) is the principal example. UMI has been in this business for years and has managed to persuade approximately 70% of the journal publishers to agree to a royalty arrangement. UMI reproduces and sells journal articles on demand to the public for $8 each. The profit on each sale is divided between UMI and the original publisher. Again, no ERIC money is involved in these transactions.

After the CIJE publisher has completed each issue of CIJE, a magnetic tape containing the bibliographic data is sent to the ERIC Facility for integration into the Master ERIC database.

The lexicographic function is handled in two ways. The Facility continues to receive and process all suggestions for new terms, whether generated for RIE or CIJE. The Facility continues to review all new Identifiers for both publications; it does this as the data passes through its hands from the Clearinghouses on the way to the CIJE publisher. The Facility provides the CIJE publisher with a monthly updated Thesaurus tape for use in validating all index terms used in a given issue.

f. U.S. Government Printing Office (GPO)

Once a month the ERIC Facility prepares a magnetic tape containing data for an issue of RIE, to be run on the GPO photocomposition device. This device is currently a Videocomp and therefore the tape must contain all the necessary codes to tell the Videocomp how to compose the data, e.g. what is bold, what is italics, what is the leading between lines, how many columns, how are the running heads structured, etc. In order to ensure that the content of the tape is accurate, a computer printout proof listing in the form of the publication itself is prepared from the tape and accompanies it to GPO.

GPO photocomposes the journal issue, prints it in approximately 5,000 copies, satisfies the subscriptions, sends a certain stock to the ERIC Facility, and puts the rest up for sale on an on-demand basis. GPO weeds its stock mercilessly and RIE's more than two years old are generally out-of-print at GPO. For this reason, the CIJE publisher prepares annual cumulations of both CIJE and RIE which are kept in print commercially indefinitely.

g. Online Retrieval Vendors

The major vendors in the U.S. of sophisticated online retrieval services for bibliographic files are DIALOG Information Services, System Development Corporation (SDC), and Bibliographic Retrieval Services (BRS). In each case, the services provided are based on different software and therefore the command structure and details vary, nevertheless the capabilities are roughly the same.

Each online vendor subscribes to the ERIC database and receives regular monthly tapes containing data for the most recent issue of RIE. Each month they update their search files.

For the provision of such retrieval services, ERIC relies entirely on the online vendors. The pressures of competition among them ensure a steady stream of improvements and if one vendor's system goes down the others are ready and waiting to pick up the business. The public pays only for what it uses and, again, ERIC achieves an important objective at no cost to itself.

3. Controls for System Coordination

As mentioned earlier, the decentralized nature of the ERIC system, the fact that it is not all together in one place, necessitates various procedures and products directed at coordinating the efforts of the geographically separated components of the system. Some of these are described below:

- ERIC Telephone Directory

  Lists full addresses, telephone numbers, time zone, NIE monitor, staff names and titles. Indexes all staff by name and specialty.

- ERIC Master Schedule (Annual)

  Schedules each weekly shipment of data and documents to the Facility and the Facility functions to be performed on a given issue. The Clearinghouses can tell in advance what shipments will go in what issue and when the deadline dates are. Done in two versions, one for RIE and one for CIJE.

- ERIC Facility Contract Deliverable Item Schedule

  An annual schedule detailing projected dates for all ERIC Facility products.

- ERIC Conference Calendar

  Lists all projected conference/meeting participation by the Clearinghouses for the year ahead. Arranged chronologically and by conference name. Avoids duplicate attendance.

- ERIC Acquisitions Arrangements

  Lists all formal acquisitions arrangements consummated by the Facility or the Clearinghouses. Arranged by organization. Displays contact person name, date of arrangement, level of reproduction release. Prevents duplicate contacts.

- ERIC Processing Manual (EPM)

  The "Bible" of the system, containing detailed procedures for the Clearinghouses to follow in performing the Acquisition, Selection, Document Handling, Cataloging, Indexing, Abstracting, Data Entry, and Lexicographic functions.

- Source Journal Index

  Lists all of the journals covered by CIJE together with the name of the Clearinghouse having responsibility for the journal.

- Source Directory

  Lists the names of all of the organizations that have either prepared or sponsored documents that have been entered into the ERIC database. The names are in an approved format so that all usages of the same organization will refer to it in a standardized way. Updated monthly.

In addition to these products, all forms that are used across the system are standardized, printed, and stocked by the Facility. This ensures that Clearinghouses will not vary in their wording on critical forms and labels, such as the Reproduction Release.

4. Output Products and Services

ERIC has four basic commodities: bibliographic data, original full-text documents, authority lists, and the results of its analysis and synthesis of the literature. ERIC's strategy is to package these four commodities in as many ways as it can in order to reach as many people as possible. The flagship products are, of course, the two abstract journals: Resources in Education (RIE) and Current Index to Journals in Education (CIJE). The total set of products and services can be classified under the following headings:

Products From the Database

- Abstract Journals

  Resources in Education (RIE)
  Current Index to Journals in Education (CIJE)

- Other Reference Publications

  Title Index
  Contract/Grant Number Index
  Report Number Index

- Computer-Output-Microform (COM)

  Cumulative Indexes (Subject, Author, Institution)
  Descriptor and Identifier Usage Reports
  Resume Cumulations

- Magnetic Tapes

- Search Services

  Computer Searches (on demand, batch)
  Online Retrieval
  Selective Dissemination of Information (SDI)

Products From the Original Documents

- Document Delivery (Subscription and On-Demand)

  Microfiche (Silver and Vesicular)
  Paper Copy Reproductions

Products From the Authority Lists

- Thesaurus of ERIC Descriptors
- Identifier Authority List (IAL)
- Source Directory

Products and Services Based on Analysis/Synthesis of the Literature

- Information Analysis Publications
- Bibliographies
- Question-Answering Services
- Conference Participation
- Journal/Serial Columns

IV. THE FUTURE OF ERIC

As we have mentioned, there are currently various uncertainties and intangibles that cloud our crystal ball when we look at the future of ERIC. Changing fiscal policies in the Government and a re-prioritizing of Federal spending are the most significant environmental factors with which we must contend. Nevertheless, we do not believe that the perceived need for Government-sponsored information dissemination services will disappear. The role and effectiveness of such activities, however, will clearly be closely scrutinized and some redundant systems may be merged with others, but the strong, well-managed, and genuinely needed systems will survive. To demonstrate that it is among this group, ERIC intends (by user feedback projects and studies) to strengthen its understanding of the clients to be served and how best to organize and deliver products and services. Recent efforts in this direction have generated information about the usage of ERIC that is proving every day its utility in the budget deliberations.

For example: ERIC products and services are accessible through over 3,200 locations in the United States and perhaps as many as 300 locations abroad. These locations represent many different types of secondary service providers to which educators turn for educational information. The $5 million dollars allocated annually to ERIC brings under permanent bibliographic control the output of hundreds of millions of dollars of educational R&D efforts, both Federal and non-Federal. In response to that basic expenditure, the various ERIC access points spend approximately $25 million annually to support the distribution and use of ERIC information, or about 5 times as much as is contributed by the Federal Government. This is an outstanding example of government's ability to spend a small but essential number of "seed" dollars that then stimulates much greater expenditures on the part of other sectors of the economy. ERIC functions as a "wholesaler," developing products and services within the concept of generalized dissemination assistance. The thousands of "retailers" then provide a multiplier effect. The end result is an economical system that solidly links knowledge to practice and that provides a great deal of freedom of choice for the information consumer.

Let us look at some specific areas and see what can be said about the future:

Funding Levels/Restoration of Recently Lost Budget Funding

A review of ERIC's budget history reveals that since 1972, if the budgets are adjusted for inflation, ERIC has suffered a 50% drop in buying power. In addition, for FY 1982 ERIC had to absorb a direct 15% cut in funding levels. As a result, ERIC was finally forced to order the first serious reductions in its history in the volume of material input to the database.

ERIC regards the database as its top priority program and is fighting hard to have funds restored that will return the database to former levels of information acquisition. We are optimistic that this will occur, probably by FY 1984.

Modernization and Quality Control of Basic Internal Processes

We foresee a modest expenditure of resources for internal technological or administrative improvements. Examples might be moves to online duplicate checking, online data entry, online editing, and electronic mail/conferencing among clearinghouses.

Improving Awareness of ERIC Among Users/Outreach Activities

We plan to devote resources to increasing the level of awareness of and access to ERIC resources among users. ERIC needs to reach segments of the educational community not now aware of ERIC or how to use its resources. School librarians and schools of education will be specific targets of ERIC outreach activities. Particular attention will be paid to demonstrating how ERIC can be a resource to educators attempting to resolve real-life local educational problems.

Expansion of the Database/National Practice File

An FY 82 developmental effort of the ERIC program is the National Educational Practice File, designed to give teachers and administrators improved access to information on educational practices. The National Educational Practice File is intended to improve the availability and use of information about educational practice by teachers and school administrators through the development of an information file specifically targeted to their needs. Because teachers and school administrators will be the ultimate users of the file, they will be involved in specifying its content and format and developing specifications for the types of materials needed to support school improvement efforts. The intent is to develop a file that is as responsive as possible to users. Documents meeting those specifications will be placed in a special computerized file.

Technical Assistance

Over the past several years, State Education Agencies have been calling on ERIC staff and contractors to provide technical assistance for their database development efforts. We anticipate further requests, especially as we work with other types of organizations to increase their dissemination abilities and resources. To be able to respond to such requests for help from these information providers, our Clearinghouse and Facility contractors will require some modest additional resources.

New Technology Harnessed for New Products

In the late 1970's, two different reviews found ERIC to be at the state-of-the-art in its use of information and communication technologies. By FY 1984 we will be half a decade away from those reviews——a period of exponential growth in such technologies. The ERIC system must invest some resources to pilot test the application of such rapidly advancing new technologies as microcomputers and videodisc technology in delivering ERIC resources to potential clients. Some work in this area occurred during the past year but was eliminated in FY 1982. If ERIC is to remain a leading information system, ERIC contractors will need to continue to be able to conduct at least some small scale special projects to explore the applications of new technologies to the ERIC system.

In summary, while ERIC's basic existence may not be threatened, its future in terms of modifications, improvements, or new products/services, is dependent on an increase in its funding. Present plans within the Department of Education are to give ERIC that funding. If this may be regarded as in ERIC's future, then the future looks brighter for ERIC than it has in many years.

CHRONOLOGY OF MAJOR EVENTS
(1970-1980)

1959-60
- Conceptualization and Feasibility Studies

1961
- Thesaurus Conceptual Development (Western Reserve University)
- ERIC Name Coined

1964
- ERIC Founded

1965
- ERIC Funded (ESEA)
- EDRS Contract to Bell & Howell (Nov.)

1966
- Panel on Educational Terminology Established
- Clearinghouses 1-12 Established
- ERIC Facility Contract to North American Rockwell (May)
- "Birth" of ERIC — Full Implementation (June)
- Research in Education (RIE) Appears (Nov.)

1967
- Clearinghouses 13-18 Established
- ERIC's Name Changed to "Educational Resources" (July)
- EDRS Contract to National Cash Register (Dec.)
- Thesaurus of ERIC Descriptors First Published

1968
- Clearinghouse on Teacher Education Established

1969
- Research in Education Put on GPO Linotron
- CIJE Journal Publication Appears

1970
- ERIC Facility Contract to Leasco Systems & Research Corp.
- Clearinghouses on Educational Management; Social Science Education; Tests, Measurement, and Evaluation Established
- ERIC Data Base Users Conference (First)
- ERICTAPES/ERICTOOLS Program Begun

1971
- EDRS Contract to LIPCO
- ERIC Data Base Goes On-Line with Lockheed

1972
- Rand Report on ERIC's Structure and Organization
- Clearinghouses on Languages and Linguistics; Reading and Communication Skills Established. (Both Amalgamations of Two Existing Clearinghouses)
- ERIC Moves from OE to NIE (July)
- ERIC Facility User Services Program Begun
- *Interchange* Newsletter Begun
- ERIC Facility Contract Retained by Operations Research, Inc. (Formerly Leasco Systems & Research, Inc.)
- Fry Study of ERIC Products and Services

1973
- Clearinghouse in Career Education Established (Replaces Vocational and Technical Education)
- Field User Participation in Improving Indexing Vocabulary Initiated
- ERICTAPES Program Distributes 1000th Tape

1974
- Clearinghouse on Information Resources Established (Replaces Library and Information Sciences)
- Clearinghouse on Urban Education (Formerly Disadvantaged)
- EDRS Contract Awarded to CMIC (Vesicular Microfiche)
- Complete Revision and Expansion of the ERIC Processing Manual Completed
- Publication Type Data Element Added to File

1975

- ERIC Data Base Achieves 100,000th ED # Accession
- *Research in Education* Changes Name to *Resources in Education*
- ERIC Receives National Micrographics Award "for Outstanding Contributions to Micrographics"

1976

- ERIC Converts to Optical Character Recognition (OCR) for Data Entry
- All Images on ERIC Microfiche Filmed in "Right-Reading" Orientation

1977

- Vocabulary Improvement Project (VIP) Initiated — Complete Revision of Thesaurus
- National Dissemination Forum (first — Subsumes ERIC Users Conference)
- ERIC Technical Steering Committee Formed
- UMI Reprint Service for CIJE Articles Inaugurated

1978

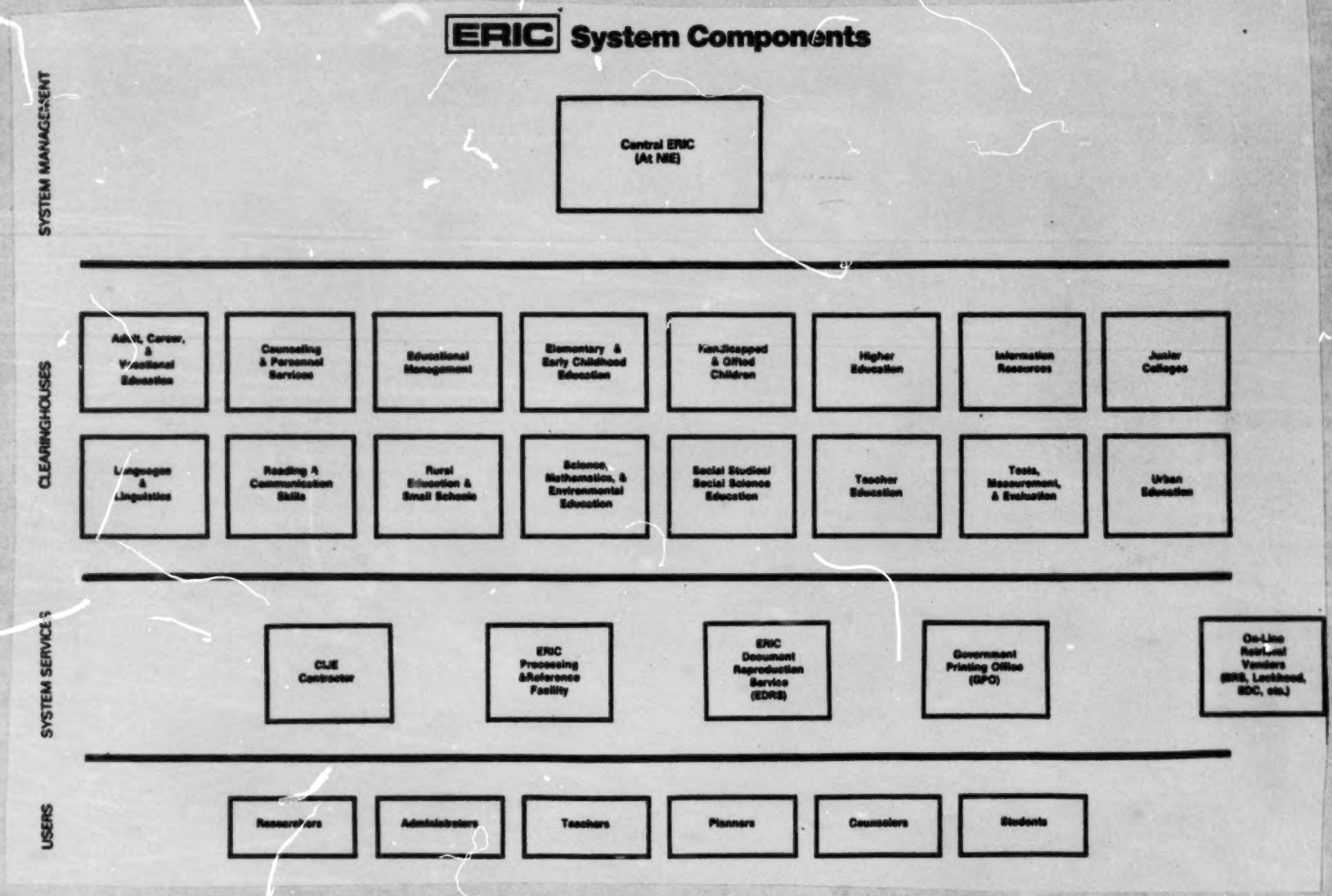
- State Technical Assistance Trips Initiated (Fostering Compatibility with ERIC Files)
- *ERIC Document Reproducibility Guidelines* Completed
- Complimentary Distribution of Microfiche to Authors Begun
- New Data Elements for Geographic Source, Language, and Government Status Begun
- Information Analysis Product (IAP) Bibliography Series Begun by Facility

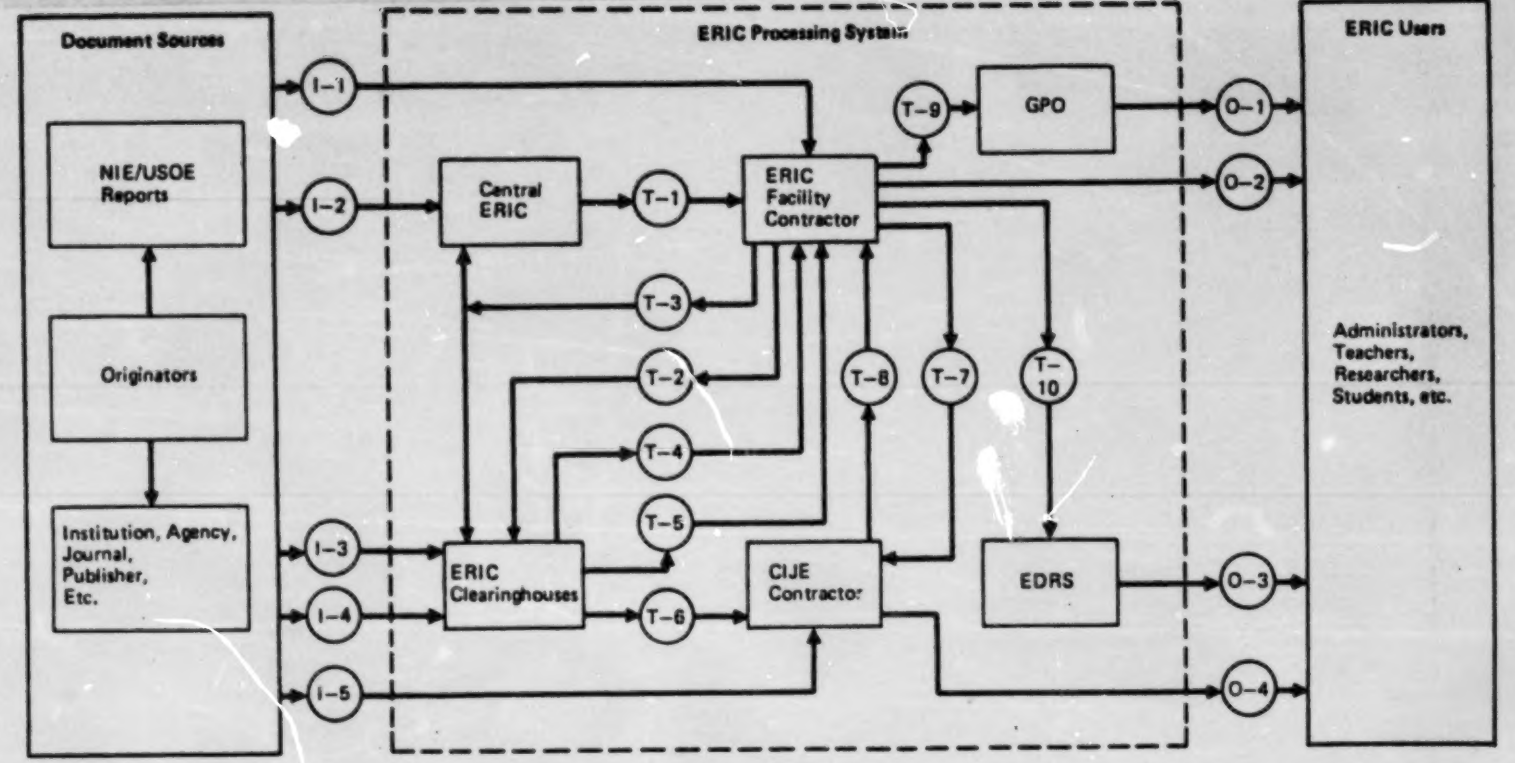
1979

- NIE Reference Correspondence Assignment to ERIC Facility (20,000 Letters per Year)
- RIE Produced via Videocomp Photocomposer (Replaces Linotron)
- Oryx Press Becomes CIJE Contractor
- Price Codes Replace Specific Prices in RIE
- Publication Type Index Added to RIE
- CIJE Copyright Granted to Oyrx
- ERIC Data Base Achieves One-Third of a Million Accessions

1980

- Vocabulary Improvement Project Completed (New *Thesaurus* Published)
- ERIC Users Conference Held at American Library Association (ALA) Annual Conference (for First Time)
- NBS Study of "Technology-Based Improvement of ERIC System" Completed (Treu Report)
- *History of ERIC* Completed
- NIE Moves Into New Department of Education


ERIC System Components
SYSTEM MANAGEMENT
Central ERIC (At NIE)
CLEARINGHOUSES
Adult, Career, & Vocational Education
Counseling & Personnel Services
Educational Management
Elementary & Early Childhood Education
Handicapped & Gifted Children
Higher Education
Information Resources
Junior Colleges
Language & Linguistics
Reading & Communication Skills
Rural Education & Small Schools
Science, Mathematics, & Environmental Education
Social Studies/ Social Science Education
Teacher Education
Tests, Measurement, & Evaluation
Urban Education
SYSTEM SERVICES
CIJE Contractor
ERIC Processing &Reference Facility
ERIC Document Reproduction Service (EDRS)
Government Printing Office (GPO)
On-Line Retrieval Vendors (SDC, etc.)
USERS
Researchers
Administrators
Teachers
Planners
Counselors
Students



I = Major Inputs

- I-1 Facility Acquisitions Program Receipts (Documents Received via Specific Requests or Automatic Arrangements)
- I-2 NIE and USOE Reports Generated By Contractors and Grantees (and Released By Project Officer)
- I-3 Documents Acquired By Clearinghouses via Specific Request or Automatic Request
- I-4 Education Journals Within the scope of Specific Clearinghouses
- I-5 Education Journals of a General Nature and Not Within the Scope of Any One Clearinghouse

T = Major Intra-System Transfers

- T-1 Documents (Released by Project Officers) To Be Assigned to Clearinghouses
- T-2 Documents That Pass Initial Facility Selection Criteria, and that are Within Subject Scope – Assigned to Clearinghouses on the Basis of Individual Clearinghouse Scope of Interest Statements
- T-3 Acquisitions Data Reports, Working Copies of Thesaurus and source Directory, CH/ED Cross-Reference List, Title Index, and other internal tools
- T-4 Accessioned and Processed Documents and Resumes
- T-5 Accessioned, but not Processed Documents (for full processing by Facility)
- T-6 Journal Article Resumes (completed)
- T-7 Thesaurus Tapes; RIE Tapes
- T-8 CIJE Tape (In ERIC format
- T-9 RIE Tape (Videocomp format)
- T-10 Accessioned Documents and Single-Frame Resumes

O = Major Outputs

- O-1 RIE Sales and Distribution
- O-2 ERICTAPES/ERICTOOLS Sales and Distribution
- O-3 Microfiche and Hard Copy Sales and Distribution
- O-4 CIJE Sales and Distribution

ERIC NETWORK INTERCONNECTIONS

CLEARINGHOUSE PREFIXES

Clearinghouse Prefix Assignments found in Clearinghouse Accession Numbers, Decimal Field 17, are as follows:

CODE	CLEARINGHOUSE	MERGED INTO	
		CH	DATE
AA	ERIC Facility Contractor/CIJE Contractor		
AC	Adult, Career, and Vocational Education	CE	1973
AL	Linguistics	FL	1971
CE	Career Education		
CG	Counseling and Personnel Services		
CS	Reading and Communication Skills		
EA	Educational Management		
EC	Handicapped and Gifted Children		
EF	Educational Facilities	EA	1970
EN	Educational Media and Technology	IR	1971
FL	Languages and Linguistics		
HE	Higher Education		
IR	Information Resources		
JC	Junior Colleges		
LI	Library and Information Sciences	IR	1974
PS	Elementary and Early Childhood Education		
RC	Rural Education and Small Schools		
RE	Reading	CS	1972
SE	Science, Mathematics, and Environmental Education		
SO	Social Studies/Social Science Education		
SP	Teacher Education		
TE	Teaching of English	CS	1972
TM	Tests, Measurement, and Evaluation		
UD	Urban Education		
VT	Vocational and Technical Education	CE	1973

ERIC CLEARINGHOUSES *(and Other Network Components)*

The ERIC Clearinghouses have responsibility within the network for acquiring the significant educational literature within their particular areas, selecting the highest quality and most relevant material, processing (i.e., cataloging, indexing, abstracting) the selected items for input to the data base, and also for providing information analysis products and various user services based on the data base.

The exact number of Clearinghouses has fluctuated over time in response to the shifting needs of the educational community. There are currently 16 Clearinghouses. These are listed below, together with full addresses, telephone numbers, and brief scope notes describing the areas they cover.

ERIC Clearinghouse on *Adult, Career, and Vocational Education*
Ohio State University
National Center for Research in Vocational Education
1960 Kenny Road
Columbus, Ohio 43210
Telephone: (614) 486-3655

All levels of adult, career, and vocational and technical education. *Adult education,* including basic literacy training through professional skill upgrading; *career education,* including career awareness, instructional materials, teacher training, parent/community/business/industry involvement, experience-based education; and *vocational and technical education,* including new subprofessional fields, industrial arts, and vocational rehabilitation for the handicapped.

ERIC Clearinghouse on *Counseling and Personnel Services*
University of Michigan
School of Education Building, Room 2108
Ann Arbor, Michigan 48109
Telephone: (313) 764-9492

Preparation, practice, and supervision of counselors at all educational levels and in all settings; theoretical development of counseling and guidance; use and results of personnel procedures such as testing, interviewing, disseminating, and analyzing such information; group work and case work; nature of pupil, student, and adult characteristics; personnel workers and their relation to career planning, family consultations, and student orientation activities.

ERIC Clearinghouse on *Educational Management*
University of Oregon
Eugene, Oregon 97403
Telephone: (503) 686-5043

Leadership, management, and structure of public and private educational organizations; practice and theory of administration; preservice and inservice preparation of administrators; tasks and processes of administration; methods and varieties of organization, organizational change, and social context of the organization.

Sites, buildings, and equipment for education; planning, financing, constructing, renovating, equipping, maintaining, operating, insuring, utilizing, and evaluating educational facilities.

ERIC Clearinghouse on *Elementary and Early Childhood Education*
University of Illinois
College of Education
1310 South Sixth Street
Champaign, Illinois 61820
Telephone: (217) 333-1386

Prenatal factors, parental behavior; the physical, psychological, social, educational, and cultural development of children from birth through the primary grades; education and learning theory, research and practice related to the development of young children. Includes teacher preparation, educational programs, and curriculum-related community services, as well as administration instruction, and physical settings. Includes both the early years and childhood (ages 0-7), the "middle years" (ages 8-12), and early adolescence (ages 10-14).

ERIC Clearinghouse on *Handicapped and Gifted Children*
Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091
Telephone: (703) 620-3660

Hearing impaired, visually impaired, mentally retarded, developmentally disabled, abused/neglected, autistic, multiply handicapped, severely handicapped, physically disabled, emotionally disturbed, speech handicapped, learning disabled, other health impaired, and the gifted and the talented; behavioral, psychomotor, and communication disorders; administration of special education services; preparation and continuing education of professional and paraprofessional personnel; preschool learning and development of the exceptional children; general studies on creativity.

ERIC Clearinghouse on *Higher Education*
George Washington University
One Dupont Circle, N.W., Suite 630
Washington, D.C. 20036
Telephone: (202) 296-2597

Various subjects relating to college and university students, college and university conditions and problems, college and university programs. Curricular and instructional problems and programs, faculty, institutional research. Federal programs, professional education (medicine, law, etc.), graduate education, university extension programs, teaching-learning, legal issues and legislation, planning, governance, finance, evaluation, interinstitutional arrangements, and management of institutions of higher education.

ERIC Clearinghouse on *Information Resources*
Syracuse University
School of Education
130 Huntington Hall
Syracuse, New York 13210
Telephone: (315) 423-3640

Management, operation, and use of libraries; the technology to improve their operation and the education, training, and professional activities of librarians and information specialists. Education techniques involved in microteaching, systems analysis; and programmed instruction employing audiovisual teaching aids and technology, such as television, radio, computers, and cable television, communication satellites, microforms, and public television.

ERIC Clearinghouse for *Junior Colleges*
University of California
Powell Library, Room 96
405 Hilgard Avenue
Los Angeles, California 90024
Telephone: (213) 825-3931

Development, administration, and evaluation of two-year public and private community and junior colleges. Junior college students, staff, curricula, programs, libraries, and community services.

ERIC Clearinghouse on *Languages and Linguistics*
Center for Applied Linguistics
3520 Prospect Street, N.W.
Washington, D.C. 20007
Telephone: (202) 298-9292

Languages and language sciences; theoretical and applied linguistics; all areas of foreign language and linguistics instruction, pedagogy and methodology; psycholinguistics and the psychology of language learning; cultural and intercultural context of languages; application of linguistics in language teaching; bilingualism and bilingual education; sociolinguistics; study abroad and international exchanges, teacher training and qualifications specific to the teaching of foreign languages; commonly and uncommonly taught languages including English as a second language; related curriculum developments and problems.

ERIC Clearinghouse on *Reading and Communication Skills*
National Council of Teachers of English
1111 Kenyon Road
Urbana, Illinois 61801
Telephone: (217) 328-3870

Reading, English, and communication skills (verbal and non-verbal), preschool through college. Educational research and development in reading, writing, speaking, and listening. Identification, diagnosis and remediation of reading problems. Speech communication — forensics, mass communication, interpersonal and small group interaction, interpretation, rhetorical and communication theory, instruction development, speech sciences, and theater. Preparation of instructional staff and related personnel in these areas.

All aspects of reading behavior with emphasis on physiology, psychology, sociology, and teaching. Instructional materials, curricula, tests and measurement, preparation of reading teachers and specialists, and methodology at all levels. Role of libraries and other agencies in fostering and guiding reading. Diagnostic and remedial services in school and clinical settings.

ERIC Clearinghouse on *Rural Education and Small Schools*
New Mexico State University
Box 3AP
Las Cruces, New Mexico 88003
Telephone: (505) 646-2623

Economic, cultural, social, or other factors related to educational programs for American Indians, Mexican Americans, migrants, and rural residents; outdoor education; educational programs in all small schools.

ERIC Clearinghouse for *Science, Mathematics, and Environmental Education*
Ohio State University
1200 Chambers Road, Third Floor
Columbus, Ohio 43212
Telephone: (614) 422-6717

All levels of science, mathematics, and environmental education. Within these fields, development of curriculum and instructional materials; media applications; impact of interest, intelligence, values, and concept development upon learning; preservice and inservice teacher education and supervision.

ERIC Clearinghouse for *Social Studies/Social Science Education*
855 Broadway
Boulder, Colorado 80302
Telephone: (303) 492-8434

All levels of social studies and social science; content of disciplines; applications of learning theory, curriculum theory, child development theory, and instructional theory; research and development programs; special needs of student groups; education as a social science; history of education; comparative education; social studies/social science and the community; humanities education.

ERIC Clearinghouse on *Teacher Education*
American Association of Colleges for Teacher Education
One Dupont Circle, N.W., Suite 610
Washington, D.C. 20036
Telephone: (202) 293-2450

School personnel at all levels; all issues from selection through preservice and inservice preparation and training to retirement; curricula; educational theory and philosophy; educational personnel development not specifically covered by other clearinghouses. Selected aspects of physical education.

ERIC Clearinghouse on *Tests, Measurement, and Evaluation*
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08541
Telephone: (609) 734-5180

Tests and other measurement devices; methodology of measurement and evaluation; application of tests; measurement or evaluation in educational projects or programs; research design and methodology; human development; and learning theory in general.

ERIC Clearinghouse on *Urban Education*
Teachers College, Columbia University
Box 40
525 W. 120th Street
New York, New York 10027
Telephone: (212) 678-3437

Programs and practices in public, parochial, and private schools in urban areas and the education of particular racial/ethnic minority children and youth in various settings; the theory and practice of educational equity; urban and minority experiences; and urban and minority social institutions and services.

Educational Resources Information Center
(Central ERIC)
National Institute of Education
Washington, D.C. 20208
Telephone: (202) 254-7934

ERIC Processing & Reference Facility
4833 Rugby Avenue, Suite 303
Bethesda, Maryland 20814
Telephone: (301) 656-9723

ERIC Document Reproduction Service
P.O. Box 190
Arlington, Virginia 22210
Telephone: (703) 841-1212

Oryx Press
2214 North Central Avenue at Encanto
Phoenix, Arizona 85004
Telephone: (602) 254-6156

Most Suitable

- Research and Technical Reports (experimental, basic, applied);
- Descriptions:
  - —— Model Programs/Projects/Installations
  - —— Innovative Practices
  - —— Product Development (R&D)
  - —— Implementation and Dissemination Reports
- Evaluation and Study Reports;
- Surveys and Statistical Reports;
- State-of-the-Art Papers/Reviews;
- Syntheses/Interpretations/Summaries;
- Bibliographies, Discographies, Filmographies (preferably annotated);
- Conference Proceedings and Papers;
- Congressional Hearings/Reports/Documents (NOTE: not Bills);
- Position Papers;
- Guidelines (See:
  - —— Curriculum Guides
  - —— Practical "How To" Guides
  - —— Teacher Guides
- Tests, Measurement, and Evaluation Instruments;
- State Department of Education Reports;
- Documents assigned "PRIORITY" status by Central ERIC (e.g., White House Conference documents).

Acceptable

The following types of materials should be selected *only* when they appear to have *wide applicability* or when they are *exemplary products:*

- Standards and Regulations;
- Annual Reports;
- Fiscal Reports (must contain some substantive information);
- Personnel Policies, Recruitment Materials, Employment Agreements;
- Corporation-Produced Materials;
- Materials Produced by Local Agencies;
- Speeches and Presentations;
- Brief Material;
- Data Collection or Survey Instruments (by themselves);
- Books (commercial publications);
- Manuals;
- Directories (however, frequently reissued directories are unsuitable);
- Newsletters and Bulletins (professional and trade organization containing substantive material);
- Dissertations and Theses.

Unsuitable

The following types of documents are considered as unsuitable for RIE. The reasons for unsuitability vary. Journal articles are handled by CIJE. Non-print materials are out-of-scope for physical reasons, but not necessarily substantive reasons. Flyers, brochures, and other ephemera are considered too transitory and without sufficient subject content. Bills, news releases, and interim progress reports are generally preliminary in nature and are later superseded by final documents. Any of the types of documents listed below should usually be rejected:

- Advertising and Promotional Materials;
- Broadsides, Posters;
- Catalogs (commercial, curriculum);
- Bills (i.e., legislation in process);
- Fiscal Reports (with no substantive information);
- Flyers, Brochures, Ephemera;
- Interim or Preliminary Progress Reports (with no substantive information);
- Journal Articles;
- News Releases;
- Drafts that will later be superseded;
- Announcements of funding opportunities;
- Non-Print Materials;
- Proposals.

TYPES OF DOCUMENTS (MOST SUITABLE/ACCEPTABLE/NOT SUITABLE) FOR ERIC DATA BASE

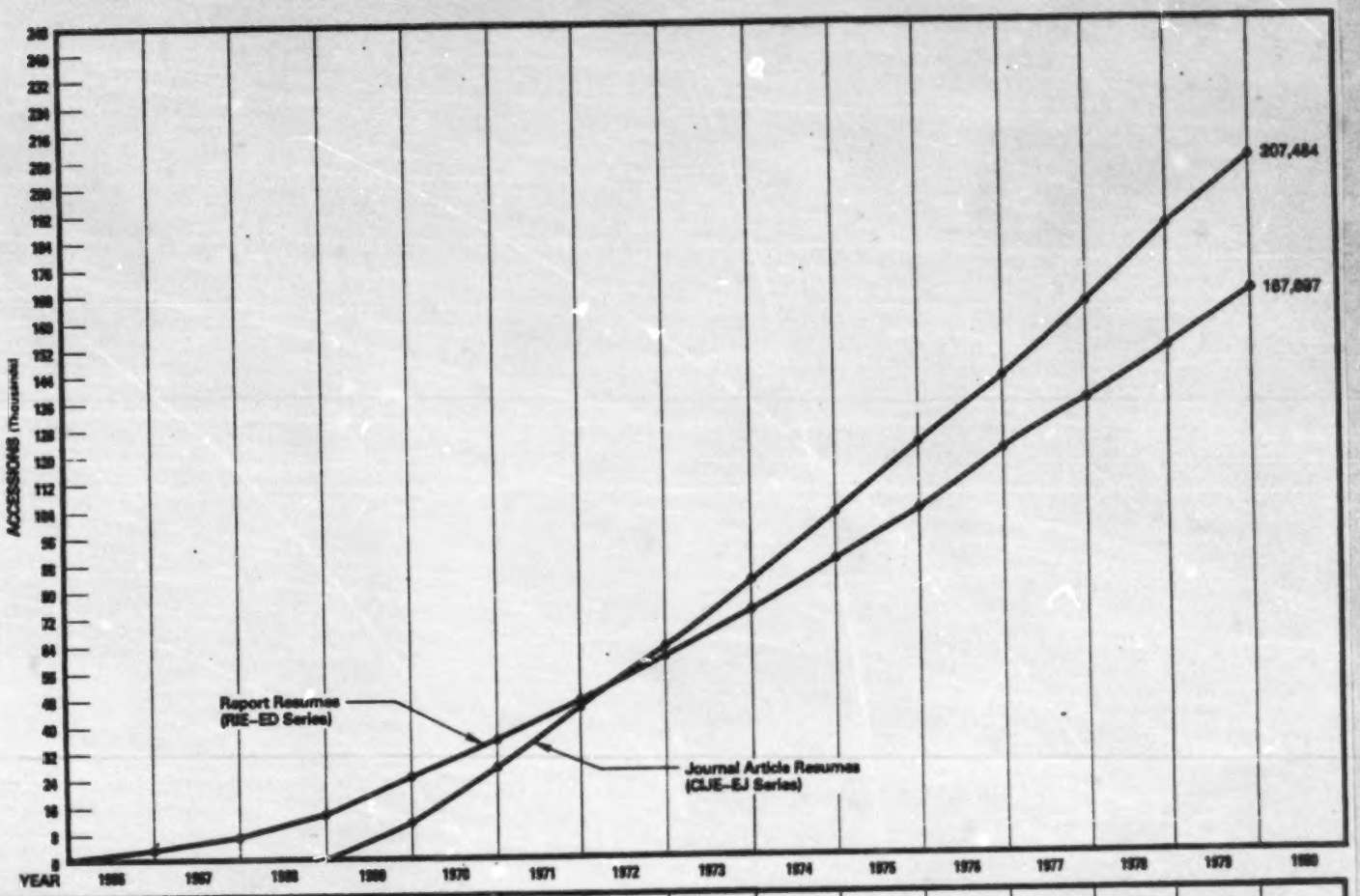
PUBLICATION TYPES IN THE ERIC DATA BASE (RIE)

(SEPTEMBER 1974 - DECEMBER 1980)

CODE	PUBLICATION TYPE	DATE INITIATED	ACCESSIONS CODED BY PUBTYPE	PERCENT OF ACCESSIONS CARRYING PUBTYPE
143	Research/Technical Reports	9-74	32,578	32.5
150	Speeches/Conference Papers (Single Papers)	9-74	18,846	18.8
050	Guides - General	9-74	13,595	13.5
141	Project/Program Descriptions	9-74	9,572	9.5
010	Books	9-74	6,030	6.0
131	Bibliographies	9-74	5,031	5.0
052	Teaching Guides (For Teacher)	7-79	2,980	3.0
120	Opinion Papers	9-74	2,477	2.5
040	Dissertations (Level Undetermined)	9-74	2,470	2.5
110	Numerical/Quantitative Data	9-74	2,214	2.2
055	Guides-Non-Classroom (For Support Staff)	7-79	2,118	2.1
080	Journal Articles	9-74	1,960	2.0
021	Conference Proceedings	9-74	1,903	1.9
070	Information Analyses	9-74	1,863	1.9
051	Instructional Materials (For Learner)	7-79	1,819	1.8
142	Evaluative/Feasibility Reports	7-79	1,541	1.5
090	Legal/Legislative/Regulatory Materials	9-74	1,493	1.5
160	Tests, Measurement Instruments	9-74	1,290	1.3
132	Directories/Catalogs	9-74	914	.9
999	Miscellaneous	9-74	886	.9
022	Serials	7-79	685	.7
140	Reports - General	7-79	343	.3
060	Historical Materials	9-74	310	.3
020	Collected Works	7-79	261	.3
134	Vocabularies/Classifications	9-74	197	.2
030	Creative Works	7-79	134	.1
130	Reference Materials - General	7-79	89	.1
071	ERIC Information Analysis Products	6-80	83	.1
100	Audiovisual Materials	9-74	80	.1
042	Masters Theses	7-79	37	.04
041	Doctoral Dissertations	7-79	33	.03
043	Practicum Papers	7-79	23	.02
170	Translations	7-79	20	.02
133	Geographic Materials	9-74	6	.01
			113,881	

ERIC Data Base File Growth

Resume Files



REPORTS (RIE)	Accessions Added:	1,834	3,469	8,803	10,453	10,456	12,330	12,230	14,167	14,466	15,341	16,819	15,271	15,303	16,756	
	Cumulative Total:		5,302	14,106	24,558	35,014	47,344	59,574	73,741	88,207	103,548	120,367	135,638	150,941	167,697	
ARTICLES (CIJE)	Accessions Added:				11,707	15,892	17,672	17,480	19,413	19,708	20,054	20,326	21,099	22,866	21,267	
	Cumulative Total:				11,707	27,599	45,271	62,751	82,164	101,872	121,926	142,252	163,351	186,217	207,484	

ERIC Data Base (ED Accessions)

Total Accessions Subdivided by Availability Level (I, II, III)